

Voltage Monitoring Relays

VM800 Series

Three-phase Voltage Monitoring Relay



Description

The VM800 is a three-phase voltage monitor that protects 3-wire and 4-wire motors from 145 Vac to 500 Vac regardless of their size. This voltage monitor will detect under-voltage, over-voltage, frequency drift, phase loss, phase sequence, phase asymmetry, and neutral failure. Users can configure trip and restart delays and individual faults can be enabled or disabled for each output relay. A digital LCD display provides real-time monitoring and fault visibility, along with the ability to review the last five faults. Password protection is available as a standard feature. Additionally, the device can be mounted on a DIN-rail, making it a versatile choice for various applications.

Features

LCD display with green backlight

Multi-Voltage: 3 Phase 4 Wire and 3 Phase 3 Wire at 145-500 Vac

Protection against Phase Loss, Phase Sequence, Phase Asymmetry, Under-voltage, Over-voltage, Neutral open, Over frequency and Under frequency

Selectable Over-voltage / Under-voltage, Asymmetry, Phase loss, Phase sequence, Over frequency / Under frequency

Improved accuracy and high reliability

Clear indication of trip status

Adjustable ON / OFF time delay in seconds / minutes

5 A single and dual relay outputs

Two separate relay outputs with independent programming

Password protection

Log of 5 previous faults for better monitoring

Fail-safe / Non-fail-safe relay output

Ordering Information

PART NUMBER	DESCRIPTION
VM800-20-20	145-500 VAC, Digital Voltage Monitoring Relay, 1C/O + 1C/O

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Specifications

Supply Voltage	145 - 500 Vac
Frequency	45 to 65 Hz
Trip Settings:	
Phase Loss	Configurable (Enable / Disable) (Default: Enable)
Phase Reverse	Configurable (Enable / Disable) (Default: Enable)
Phase Asymmetry	2 to 50%
Under-Voltage	Phase voltage: 90 to 288 Vac Line voltage: 155 to 500 Vac
Under-Voltage Hysteresis	3 to 20 Vac $\pm$ 2 V (7 V Default)
Over-Voltage	Phase voltage: 90 to 288 Vac Line voltage: 155 to 500 Vac
Over-Voltage Hysteresis	3 to 20 Vac $\pm$ 2 V (7 V Default)
Under Frequency	45 to 65 Hz
Over Frequency	45 to 65 Hz
Frequency Hysteresis	0.5 to 2 Hz
Asymmetry	Voltage: 5 to 99 Vac (Default 60 V) Percentage: 2 to 50%
Hysteresis for Asymmetry	Voltage: 3 to 99 Vac $\pm$ 2V (Default 7 V) Percentage: 2 to 15%
Power Consumption (Max.):	< 6 VA
Time Delay:	
ON Delay	1 s to 999 s (Default: 5 s)
Trip Time (OFF Delay)	0.1 s to 999 s (Phase loss and Phase reverse: <100 ms) Default: Neutral Loss is < 500 ms and UV, OV, Asymmetry fault is 5 s
Output:	
Relay Output	1 C / 0 + 1 C / 0
Contact Rating	5 A (Resistive) at 240 Vac / 30 Vdc
Electrical Life	1 x 10 ⁵ Operations
Mechanical Life	1 x 10 ⁷ Operations
Utilization Category:	
AC - 15	Rated Voltage (Ue): 120 / 240 V, Rated Current (Ie): 3.0 / 1.5 A
DC - 13	Rated Voltage (Ue): 24 / 125 / 250 V, Rated Current (Ie): 2.0 / 0.22 / 0.1 A
Operating Temperature	-10 °C to +60 °C
Storage Temperature	-20 °C to +70 °C
Humidity (Non Condensing)	95% (Rh)
Enclosure	Flame Retardant UL 94-V0
Dimension (W x H x D) (in mm)	36 x 90 x 66.2
Weight (unpacked)	132 g
Mounting	Base / DIN
Degree of Protection	IP20 for Enclosure and Terminals, IP40 with Front fascia for dust cover
Standard	IEC 60255-1

Certification & Standards

CE	CE-Low Voltage Directive 2014 / 35 / EU EMC Directive 2014/30/EU
RoHS	RoHS Directive 2011 / 65 / EU Delegated Directive 2015 / 863 / EU

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EMI/EMC

Harmonic Current Emissions	IEC 61000-3-2
Voltage Flicker and Fluctuations	IEC 61000-3-3
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients	IEC 61000-4-4
Surges	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Voltage Dips & Interruptions (AC)	IEC 61000-4-11
Voltage Dips & Interruptions (DC)	IEC 61000-4-29
Conducted Emission	CISPR 11
Radiated Emission	CISPR 11

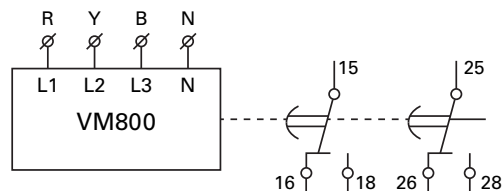
Environmental

Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6

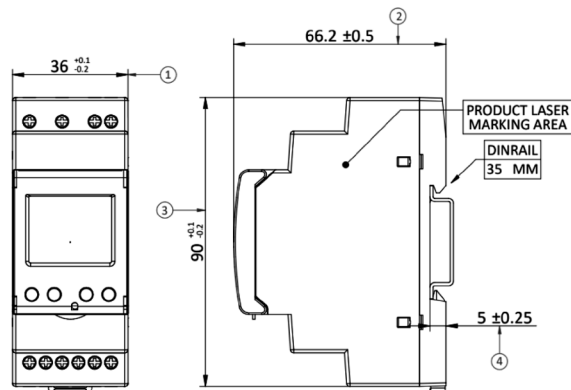
Safety

Test Voltage between I / P and O / P	IEC 60947-5-1 (2 kV)
Test Voltage between all Terminals and Enclosure	IEC 60947-5-1 (2.5 kV)
Impulse Voltage between I / P and O / P	IEC 60947-5-1 (4 kV)

Wiring diagram



Dimensions (Millimeters)



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